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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,144	01/22/2004	Leslie Ann Field	CRD-5009	6411

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EXAMINER
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JACYNA, J CASIMER

ART UNIT	PAPER NUMBER
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3751

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/763,144

Applicant(s)

FIELD, LESLIE ANN

Examiner

J. Casimer Jacyna

Art Unit

3751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 2 4-24 26-35 is/are rejected.
- 7) ☒ Claim(s) 3 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 5, 9, 12-14, 18, 21, 22, 26-33 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans. Evans discloses a bubble valve including a silicon substrate layer and a quartz cap layer as disclosed on col. 5, lines 23-45.

Evans further discloses an inlet 34, an outlet 37, a flow channel 37, a bubble forming device as is the heater disclosed on col. 3, line 24, and a movable object 22. In regard to claims 5 and 9, Evans discloses using polymeric material sandwiched between the substrates for sealing on col. 5, line 39, whereby the polymeric material is part of either substrate as claimed.

3. Claims 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Krulevitch et al. Krulevitch discloses a bubble valve including an inlet and outlet in flow channel 30, a bubble forming device 36, and a movable object 34. In regard to claim 34, Krulevitch discloses using a second bubble forming device to return the object on the last sentence of paragraph 30.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-8, 10, 11, 15-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans in view of Childers et al. Evans discloses a micro fluidic valve system on substrates substantially as claimed but does not disclose the materials used for the substrates. However, Childers teaches another micro fluidic valve system having substrates made from ceramic, glass or silicon for the purpose of allowing various manufacturing techniques to be used for making the micro valve systems. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the substrates of Evans with different materials as, for example, taught by Childers in order to gain the versatility of manufacturing the micro valve system with different techniques.

6. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans in view of Hua et al. Evans discloses a bubble valve substantially as claimed but does not disclose using an electrolytic reaction or gas to form the bubbles. However, Hua teaches another bubble valve system using both an electrolytic reaction and gas to form the bubbles for the bubble valves as disclosed in paragraphs 5 and 32 for the purpose of reducing power usage. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electrolytic reaction or gas to make the bubbles of Evans as, for example, taught by Hua in order to reduce power usage.

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7. Claims 3 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Casimer Jacyna whose telephone number is 571-272-4889. The examiner can normally be reached on Wed. thru Fri. 9AM-7PM, Mon. 7AM-1PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 703-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Casimer Jacyna  
Primary Examiner  
Art Unit 3751

JCJ